

NEW SPECIES OF CROTON FROM THE YUCATAN PENINSULA (a)

C. L. Lundell

CROTON AGUILARI Lundell, sp. nov.

Frutex, stellato-tomentosa. Petioli usque ad 7.5 cm. longi, apice glandulosi. Lamina chartacea, denticulata, late ovata, apice caudato-acuminata, basi cordata, supra subglabra, subtus albido-tomentosa. Inflorescentiae bisexuales.

Flores ♀ sessiles; calyce usque ad 3.5 mm. longo, lobis triangulari-acuminatis; stylis ca. 6 mm. longis. Flores ♂ pedicellati, glomerulati; calyce ca. 3.5 mm. longo; staminibus 36 vel 37. Capsula parce stellato-tomentosa, ca. 7 mm. longa.

A shrub with whitish to tawny tomentum of stellate hairs. Branchlets thick, with large pith, sulcate, covered at first with tawny tomentum, at length glabrescent. Petioles stout, tawny tomentose, up to 7.5 cm. long, with 4 conspicuous glands at apex on under surface. Leaf-blades thin-chartaceous, irregularly denticulate or subserrulate, the teeth gland-tipped, broadly ovate, up to 25 cm. long, 15.5 cm. wide, apex caudate-acuminate, base cordate, covered beneath with whitish tomentum of stellate hairs, sparsely stellate hairy above except along the veins, costa and primary veins elevated beneath, slightly impressed above, base 3- or 5-nerved. Racemes terminal, bisexual, up to 38 cm. long, the rachis and flowers tawny tomentose, the staminate flowers glomerulate. Pistillate flowers sessile; calyx up to 3.5 mm. long, deeply 5-lobed, the lobes strongly unequal, triangular-acuminate, subsetaceous, 1 to 3 mm. long; petals reduced to lacinae; ovary tawny tomentose with stellate hairs; styles sparsely hairy, about 6 mm. long, each once branched. Staminate flowers with slender pedicels up to 6.5 mm. long; calyx about 3.5 mm. long, deeply 5-lobed, the lobes ovate; petals 5, oblong-elliptic, about 3.5 mm. long, minutely papillate, long-pilose within at base; stamens 36 or 37, filaments glabrous; receptacle pilose. Capsules sessile, about 7 mm. long, sparsely tawny tomentose.

Type in the University of Michigan Herbarium, Mercedes Aguilar H. 463, collected in secondary forest (acahual), near La Libertad, Department of Petén, Guatemala, January 30, 1935; vernacular name "caret".

Mr. Aguilar reports that it has a bitter sap which flows copiously. The species is allied to C. asteroides Lundell, and belongs to the complex of C. xalapensis H.B.K.

CROTON AMELIAE Lundell, sp. nov.

Frutex, ramulis albido-tomentellis. Petioli usque ad 3

cm. longi. Lamina membranacea, integra, ovata, apice acuminata, basi anguste cordata, subtus albido-tomentosa. Inflorescentiae bisexuales. Flores ♀ pedicellati; calyce usque ad 11 mm. longo, lobis 5, oblong-lanceolatis, stipitato-glandulosis. Flores ♂ pedicellati; calyce 2.6 mm. longo; petalis 5, oblongis; staminibus 16.

Arborescent shrub, about 2 m. high, with whitish tomentum of stellate hairs. Branchlets erect, slender, white tomentellous and sparsely hirsute with stellate hairs. Stipules aristate, up to 1.3 cm. long. Petioles slender, white tomentellous, up to 3 cm. long. Leaf-blades membranaceous, entire, ovate, 3 to 6.8 cm. long, 1.5 to 3.7 cm. wide, apex acuminate, base cordate with a closed sinus, stellate puberulent and green above, persistently white tomentellous beneath, costa elevated beneath, slightly impressed above, 5- or 7-veined at base. Racemes terminal, bisexual, up to 7.5 cm. long, white tomentellous and sparsely hirsute. Pistillate flowers with stellate-hirsute pedicels up to 7 mm. long; calyx up to 11 mm. long, deeply 5-lobed, the lobes oblong-lanceolate, stellate-hirsute, the lower two-thirds bearing stalked prominent glands along the margins outside, the lobes tomentose within; ovary stellate hairy; styles united at base, digitately lobed. Staminate flowers with pedicels up to 5 mm. long; calyx 2.6 mm. long, the lobes lanceolate; petals 5, oblong, about 2.3 mm. long; stamens 16, filaments pilose below middle; receptacle pilose.

Type in the University of Michigan Herbarium, C. L. Lundell and Amelia A. Lundell 7447, collected in advanced deciduous forest along Kaua road, east of Chichen Itza, Yucatan, Mexico, June 8, 1938.

CROTON ASTEROIDES Lundell, sp. nov.

Arbor, stellato-tomentosa. Petioli 1--5 cm. longi, apice glandulosi. Lamina chartacea, minute denticulata, ovata vel lanceolato-ovata, apice caudato-acuminata, basi subcordata vel rotundata, supra subglabra, subtus albido-tomentosa. Inflorescentiae bisexuales. Flores ♀ sessiles; calyce ca. 2.8 mm. longo, lobis 5, triangulari-acuminatis, subsetaceis; stylis ca. 5 mm. longis. Flores ♂ pedicellati; calyce ca. 3.2 mm. longo; staminibus 30 vel 31. Capsula stellato-tomentosa, ca. 6.5 mm. longa.

A tree, 12.5 cm. in diam., with whitish tomentum of stellate hairs. Branchlets rather slender, somewhat flattened and angled. Petioles slender, 1 to 5 cm. long, with 2 or 4 conspicuous sessile or subsessile yellow glands at apex on under surface. Leaf-blades chartaceous, minutely denticulate with glandular teeth, ovate or lanceolate-ovate, 5.5 to 13 cm. long, 2.8 to 6.5 cm. wide, apex caudate-acuminate, base shallowly cordate or rounded, white tomentose beneath with

soft stellate hairs, green and very sparsely stellate hairy above except along the veins, costa and primary veins elevated beneath, fine and with age slightly impressed on upper surface, base 3- or 5-nerved. Racemes terminal, bisexual, up to 13.5 cm. long, the rachis and flowers white tomentose with soft stellate hairs. Pistillate flowers sessile; calyx about 2.8 mm. long, star-like, deeply 5-lobed, the lobes narrowly triangular-acuminate, subsetaceous; ovary white tomentellous with stellate hairs; styles sparsely hairy, about 5 mm. long, each once branched. Staminate flowers with slender pedicels up to 7 mm. long; calyx about 3.2 mm. long, deeply 5-lobed, the lobes ovate; petals 5, oblong-elliptic or obovate-oblong, 3.5 mm. long, minutely papillate, long-pilose within at base; stamens 30 or 31, filaments glabrous; receptacle pilose. Capsules sessile, about 6.5 mm. long, white tomentose with short stellate hairs.

Type in the University of Michigan Herbarium, Percy H. Gentle 2218, collected on hillsides at Vaca, El Cayo District, British Honduras, February 22, 1938.

The calyx of the pistillate flowers is asteroid in appearance, whence the specific name.

CROTON FLAVOGLANDULOSUS Lundell, sp. nov.

Frutex. Petioli 3--7 cm. longi. Lamina chartacea, integra, anguste lanceolata vel lineari-lanceolata, apice attenuata, acuta vel acuminata, basi obtusa, supra stellato-hirtella, subtus albido-tomentosa, biglandulosa. Inflorescentiae bisexuales. Flores ♀ pedicellati; calyce 3--3.5 mm. longo, lobis 5, oblongis. Flores ♂ pedicellati; calyce ca. 3 mm. longo, lobis 5; staminibus 10 vel 11. Capsula albido-tomentosa, ca. 5 mm. longa.

A shrub. Branchlets slender, wiry, tawny, densely stellate-hirtellous. Petioles rather stout, canaliculate, 3 to 7 mm. long. Leaf-blades chartaceous, entire, narrowly lanceolate or linear-lanceolate, 2.3 to 5 cm. long, 0.6 to 1.4 cm. wide, apex attenuate, acute or acuminate, base obtuse, upper surface covered with small stellate hairs, beneath with whitish tomentum of appressed stellate hairs, pinnately veined, the veins evident beneath, scarcely discernible above, costa slightly impressed above, prominent on lower surface, with a pair of stipitate yellow glands at base beneath. Racemes terminal, bisexual, up to 5.5 cm. long, tomentellous with whitish stellate hairs. Pistillate flowers with stout pedicels about 1.8 mm. long; calyx 3 to 3.5 mm. long, deeply 5-lobed, the lobes oblong, up to 3 mm. long, 1.3 mm. wide, entire, obtuse, accrescent; petal vestiges threadlike; ovary stellate-tomentellous; styles hairy, each once branched. Staminate flowers with slender pedicels up to 3 mm. long; calyx about 3 mm. long, deeply 5-lobed, the

lobes narrowly ovate, up to 2.5 mm. long; petals 5, oblong-elliptic, about 3 mm. long, 1.3 mm. wide, long-pilose at base; stamens 10 or 11, filaments glabrous, up to 3 mm. long, anthers 1 mm. long; receptacle pilose, Capsule white tomentellous with stellate hairs, about 5 mm. long.

Type in the University of Michigan Herbarium, Eizi Matuda 3042, collected in savanna at Achotal near Balancan, Tabasco, Mexico, May 9-14, 1939.

CROTON ICCHÉ Lundell, sp. nov.

Arbor parva, lepidota. Petioli 4--10 mm. longi. Lamina chartacea, subintegra, eglandulosa, lanceolata vel oblongo-lanceolata, apice obtuse acuminata, basi obtusa vel rotundata. Inflorescentiae usque ad 4.5 cm. longae. Flores ♀ pedicellati; calyce ca. 2.8 mm. longo, lobis 5, ovatis. Flores ♂ pedicellati; staminibus 9--11. Capsula ca. 7 mm. longa, lepidota, haud tuberculata.

A small tree or arborescent shrub up to 5 m. high and 5 cm. in diam., lepidote throughout; branchlets slender, ferruginous-lepidote, angled and somewhat compressed, terete with age. Petioles slender, canaliculate, 4 to 10 mm. long. Leaf-blades thinly chartaceous, subentire, eglandular, lanceolate or oblong-lanceolate, 3.5 to 9.5 cm. long, 1.2 to 3.8 cm. wide, apex obtusely acuminate, base obtuse or rounded, often subcuneate, green and sparsely lepidote above, at first densely lepidote beneath, glabrescent with age, costa plane or slightly raised on upper surface, prominent beneath, pinnately veined, the veins fine and inconspicuous. Racemes axillary and terminal, staminate or bisexual, up to 4.5 cm. long, ferruginous-lepidote. Pistillate flowers with short stout pedicels about 2.5 mm. long; calyx about 2.8 mm. long, deeply 5-lobed, the lobes ovate, tomentose within; petals 5, oblanceolate or spatulate, clawed, about 3 mm. long, lepidote outside, densely short villous-tomentose within; ovary lepidote; styles punctate, branched 2 or 3 times. Staminate flowers with slender pedicels about 2 mm. long; calyx about 2.8 mm. long, deeply 5-lobed; petals 5, elliptic, about 3 mm. long, clawed; stamens 10 or 11, filaments sparsely pilose; receptacle pilose. Capsules ferruginous-lepidote, smooth, not tuberculate, about 7 mm. long; fruiting pedicels and calyx not accrescent.

Type in the University of Michigan Herbarium, C. L. Lundell and Amelia A. Lundell 7871, collected in advanced forest on Merida road between Pisté and Yokdzonoot, Yucatan, Mexico, July 11, 1938. In second growth near Pisté, Lundell and Lundell 7547, June 14, 1938. In advanced forest east of Coba, Quintana Roo, Mexico, Lundell and Lundell 7719, June 30, 1938; vernacular name "icché".

In Maya, ic is chili and che is wood or tree. The leaves

and wood of the tree have an odor suggestive of the chili pepper, whence the Maya name "icche". C. Icche is a member of the complex which includes C. glabellus L., C. perobtusus Lundell, and C. pseudoglabellus Lundell.

CROTON ITZAEUS Lundell, sp. nov.

Frutex, stellato-tomentosa. Petioli usque ad 1 cm. longi. Lamina chartacea, serrato-dentata, lanceolato-oblonga, apice acuta vel obtusa, basi obtusa vel rotundata. Inflorescentiae bisexuales, usque ad 3.5 cm. longae. Flores ♀ pedicellati; calyce usque ad 6 mm. longo. Flores ♂ pedicellati; staminibus 11--13.

Shrub, 1 m. high, intricately branched, stellate-tomentose. Branchlets slender, at first tomentose, the stellate hairs with central ray elongated sharply. Petioles up to 1 cm. long. Leaf-blades chartaceous, lanceolate-oblong or ovate-lanceolate, 1.5 to 5 cm. long, 0.8 to 2.2 cm. wide, apex usually acute, sometimes bluntly obtuse, base obtuse or rounded, yellow-green above and densely covered with soft stalked stellate hairs, with whitish tomentum of stellate hairs beneath, margin irregularly serrate-dentate, usually with small short-stalked glands between the serratures and at base of blade, pinnately veined, the costa and veins conspicuous beneath. Racemes terminal, bisexual, up to 3.5 cm. long, with whitish tomentum of stellate hairs. Pistillate flowers with stout pedicels about 1 mm. long; calyx up to 6 mm. long, 5-lobed, the lobes unequal, oblong or obovate-elliptic; petal vestiges minute, resembling staminodes; ovary stellate-tomentose; styles 3, each once branched. Staminate flowers with pedicels up to 3 mm. long; calyx 2.8 mm. long, lobes ovate-oblong; petals 5, oblanceolate, up to 3.5 mm. long, ciliate, the hairs below middle elongated; stamens 11 to 13, filaments glabrous; receptacle pilose.

Type in the University of Michigan Herbarium, C. L. Lundell and Amelia A. Lundell 8046, collected in open cactus thicket bordering south edge of cienaga near Progreso, Yucatan, Mexico, July 22, 1938.

CROTON PEROBTUSUS Lundell, sp. nov.

Arbor, lepidota. Petioli 0.5--1.8 cm. longi. Lamina subcoriacea, integra, oblonga vel lanceolato-oblonga, utrinque obtusa. Inflorescentiae bisexuales, usque ad 5 cm. longae. Flores ♀ subsessiles; calyce fere ad basim partito, lobis 5, ovatis, 2.2--2.5 mm. longis. Flores ♂ pedicellati; staminibus 11 vel 12. Pedicelli fructiferi 2--3 mm. longi. Capsula haud tuberculata, lepidota, ca. 6.5 mm. longa.

A tree up to 18 m. high and 40 cm. in diam., silvery lepidote throughout. Branchlets stout, angled. Petioles stout, 0.5 to 1.8 cm. long, shallowly canaliculate, eglandular at

apex. Leaf-blades subcoriaceous, entire, oblong or lanceolate-oblong, 7 to 14.5 cm. long, 3.3 to 5.3 cm. wide, apex and base usually bluntly obtuse, apex sometimes obtusely subacuminate, sparingly lepidote above at first, glabrous with age, densely lepidote beneath, costa slightly elevated above, prominent beneath, pinnately veined, the primary veins prominulous on both surfaces. Racemes subspicate, bisexual, axillary, up to 5 cm. long. Pistillate flowers subsessile, the pedicels less than 1 mm. long; calyx 5-lobed nearly to the base, the lobes ovate, 2.2 to 2.5 mm. long, entire, with finely lanate margins; petals 5, obovate or elliptic, up to 3 mm. long, short-clawed, margins long-ciliate-lanate; ovary lepidote; styles 3. Staminate flowers short-pedicellate, calyx and corolla as in pistillate flowers; stamens 11 or 12, filaments 3 mm. long, anthers 1 mm. long; receptacle pilose. Fruiting pedicels stout, usually 2 to 3 mm. long, rarely up to 4 mm. long. Capsules smooth or nearly so, lepidote, about 6.5 mm. long.

Type in the University of Michigan Herbarium, Eizi Matuda 3327 (flowers), collected in advanced forest at La Palma, near Balancan, Tabasco, Mexico, June 1--6, 1939. At Reforma, near Balancan, Matuda 3160 (fruits), May 22--26, 1939.

CROTON PETENENSIS Lundell, sp. nov.

Arbor, stellato-lepidota. Petioli 1--3.5 cm. longi, apice biglandulosi. Lamina membranacea, crenato-dentata, elliptico-oblonga vel obovato-elliptica, apice rotundata, emarginata, vel obtuse subacuminata, basi obtusiuscula, utrinque parce stellato-lepidota. Infructescentiae usque ad 11.5 cm. longae. Capsula parce stellato-lepidota, ca. 9 mm. longa.

A tree 8 m. high, stellate-lepidote, the scales silvery. Branchlets rather slender, at first densely stellate-lepidote. Petioles very slender, canaliculate, 1 to 3.5 cm. long, bearing at apex on upper side two prominent subsessile glands. Leaf-blades thin-membranaceous, crenate-dentate, the teeth gland-tipped, elliptic-oblong or obovate-elliptic, 3 to 11 cm. long, 1.4 to 4.7 cm. wide, apex rounded, emarginate or obtusely subacuminate, base obtusish, at first sparsely stellate-lepidote on both surfaces, glabrescent above with age, base 3-nerved, costa elevated beneath, veins prominulous. Pistillate flowers unknown. Staminate flowers in bud only, pedicellate, stellate-lepidote; calyx-lobes 5, petals 5, the petals pilose; stamens 16, filaments glabrous; receptacle pilose. Infructescence terminal, up to 11.5 cm. long; fruiting pedicels stout, recurved, 3 to 4 mm. long. Capsules rather sparsely stellate-lepidote, about 9 mm. long.

Type in the University of Michigan Herbarium, C. L. Lundell 4128, collected in secondary forest along Aguada Tigre--Yaxha road, Department of Petén, Guatemala, June 17, 1933.

CROTON PSEUDOGLABELLUS Lundell, sp. nov.

Arbor, lepidota. Petioli 2--4.5 mm. longi. Lamina chartacea, integra, eglandulosa, ovata, apice obtusa vel acutiuscula, basi rotundata, lepidota. Inflorescentiae bisexuales. Flores ♀ subsessiles; calyce ca. 2.8 mm. longo, lobis 5, ovatis vel lanceolatis. Flores ♂ subsessiles; staminibus 9--11.

A tree 6 m. high, lepidote; branchlets erect, rather stout, angled. Petioles 2 to 4.5 mm. long. Leaf-blades chartaceous, entire, ovate, 2.2 to 5.5 cm. long, 1.2 to 3.1 cm. wide, apex obtuse or acutish, base rounded, at first densely lepidote on both surfaces, glabrescent above with age, costa prominent beneath, less conspicuous above, pinnately veined, the veins obscure. Racemes axillary, bisexual, crowded, up to 2.3 cm. long, ferruginous-lepidote. Pistillate flowers with pedicels about 1.6 mm. long; calyx about 2.8 mm. long, deeply 5-lobed, the lobes ovate or lanceolate; petals 5, spatulate, about 2.5 mm. long, short-clawed, villous-ciliate; ovary ferruginous-lepidote; styles 3, branched 3 times. Staminate flowers with pedicels about 1 mm. long; stamens 9 to 11, filaments sparsely pilose below middle.

Type in the University of Michigan Herbarium, G. F. Gaumer 1407, collected at Lake Chichankanab, Quintana Roo, Mexico.

The small ovate leaves and compact inflorescences distinguish this species from C. glabellus L. and its allies.

CROTON SUTUP Lundell, sp. nov.

Frutex, stellato-tomentosa. Petioli 0.5--1.8 cm. longi. Lamina chartacea, integra, eglandulosa, oblanceolata vel oblongo-elliptica, apice acuta vel acuminata, basi obtusa. Inflorescentiae bisexuales. Flores ♀ pedicellati; calyce 5.3 mm. longo, lobis lineari-oblongis. Flores ♂ pedicellati; staminibus 11.

A shrub, about 2 m. high, with soft whitish or brownish tomentum of stellate hairs. Branchlets slender, brownish tomentose with age. Stipules aristate. Petioles slender, 0.5 to 1.8 cm. long. Leaf-blades chartaceous, entire, oblanceolate or oblong-elliptic, 4 to 8 cm. long, 1.2 to 3.8 cm. wide, apex acute or acuminate, base obtuse, green and sparsely hairy above, whitish tomentose beneath, costa and veins impressed above, prominent beneath, pinnately veined with base 3-nerved. Racemes terminal, bisexual, up to 8.5 cm. long, whitish tomentose. Pistillate flowers with stout pedicels about 2 mm. long, sharply accrescent; calyx 5.3 mm. long, accrescent, 5-lobed, the lobes linear-oblong; styles 3, digitately lobed. Staminate flowers with slender pedicels about 4 mm. long; calyx 2.5 mm. long, lobes ovate-oblong;

petals 5, oblanceolate, about 2.8 mm. long, ciliate, the basal hairs elongated; stamens 11, filaments sparsely pilose below middle. Immature capsules stellate-tomentose.

Type in the University of Michigan Herbarium, C. L. Lundell and Amelia A. Lundell 7363, collected in low second growth near Pisté, Yucatan, Mexico, June 4, 1938; vernacular name "sutup".

CROTON TABASCENSIS Lundell, sp. nov.

Arbor, stellato-hirsuta vel tomentosa. Petioli usque ad 1.8 cm. longi. Lamina chartacea, ovata vel oblongo-ovata, apice acuta vel subacuminata, basi subcordata vel rotundata, glabrata, margine minute denticulata. Inflorescentiae bisexualis. Flores ♀ pedicellati; calyce ca. 6.5 mm. longo, lobis 5, ovatis. Flores ♂ pedicellati; calyce ca. 4 mm. longo, lobis 5; staminibus 15 vel 16. Capsula stellato-hirsuta.

A tree 7 m. high and 25 cm. in diam., stellate hairy throughout. Branches stout; branchlets slender, densely short-hirtellous with appressed stellate hairs, the central ray elongated sharply. Petioles slender, up to 1.8 cm. long, shallowly canaliculate. Leaf-blades chartaceous, ovate or oblong-ovate, 2.5 to 7 cm. long, 1.4 to 3.4 cm. wide, apex acute or short-acuminate, base shallowly cordate or rounded, minutely denticulate, eglandular, with scattered appressed stellate hairs on both surfaces, glabrate with age, palmately veined, basal veins 5 or 7, costa and veins prominulous and whitish beneath, inconspicuous and slightly impressed above. Cymes terminal, bisexual, up to 9 cm. long, rachis and flowers stellate-tomentose. Platillate flowers with pedicels 3 to 6 mm. long; calyx about 6.5 mm. long, deeply 5-lobed, the lobes ovate, about 5 mm. long, 4 mm. wide, irregularly toothed below middle, acutish; ovary stellate-tomentose; styles stellate hairy, twice branched. Staminate flowers with pedicels up to 3 mm. long; calyx 4 mm. long, the lobes ovate, entire, about 3 mm. long, 2 mm. wide; petals 5, narrowly oblong-elliptic, about 3.5 mm. long, 2 mm. wide, pilose; stamens 15 or 16, filaments pilose below middle, 3 to 4 mm. long; receptacle pilose. Capsule densely stellate-hirsute, about 7 mm. long (immature).

Type in the University of Michigan Herbarium, Eizi Matuda 3145, collected at Reforma, near Balancoan, Tabasco, Mexico, May 22--26, 1939.

Probably related to C. Soliman Schlecht. & Cham.

CROTON YUCATANENSIS Lundell, sp. nov.

Frutex, stellato-lepidota. Petioli usque ad 3.5 cm. longi. Lamina membranacea, subintegra, lanceolata vel ovata, eglandulosa, apice acuminata, acuta vel obtusa, basi subcordata vel rotundata, subtus albido-lepidota. Inflorescentiae

bisexuales, ad 21 cm. longae. Flores ♀ pedicellati; calyce 4 mm. longo, lobis late ovatis. Flores ♂ pedicellati; staminibus 13--18. Capsula ca. 5 mm. longa.

Arborescent shrub, up to 2 m. high, with whitish scale-like stellate hairs. Branchlets slender. Stipules reniform, at first small and long-aristulate-cuspidate, becoming foliaceous. Petioles slender, up to 3.5 cm. long. Leaf-blades membranaceous, obscurely and minutely denticulate, appearing entire, lanceolate or ovate, 2 to 10 cm. long, 1.3 to 5 cm. wide, apex acuminate, acute or obtuse, base subcordate or rounded, green and very sparsely lepidote above, densely white lepidote beneath, base 5- or 7-nerved, costa and veins conspicuous beneath, slightly impressed above. Racemes very slender, terminal, bisexual, up to 21 cm. long. Pistillate flowers with pedicels about 2.5 mm. long, accrescent; calyx 4 mm. long, thin, sharply accrescent, 5-lobed to middle, the lobes broadly ovate, acutish, becoming rounded, ruffled with age; petal vestiges pilose; ovary white stellate-lepidote; styles branched 3 or 4 times. Staminate flowers with slender pedicels about 5 mm. long; calyx 3 mm. long, lobes ovate; petals linear, variable in number; perfect stamens 13 to 18, filaments pilose. Capsules about 5 mm. long.

Type in the University of Michigan Herbarium, C. L. Lundell and Amelia A. Lundell 7400, collected in second growth at kilometer 77, Merida-Chichen Itza road, Yucatan, Mexico, June 3, 1938. In low second growth bordering Sacred Cenote at Chichen Itza, Lundell and Lundell 7524, June 12, 1938.

Related to C. Watsonii Standl.

(a) Papers from the University of Michigan Herbarium.

NOVELTIES IN THE AVICENNIACEAE AND VERBENACEAE

Harold N. Moldenke

AVICENNIA BALANOPHORA Stapf & Moldenke ex Moldenke, Geogr.

Distrib. 34, nom. nud. (1939), sp. nov.

Arbor; ramulis gracillimis subteretibus dense griseo-farinaceis glabrescentibus; nodis annulatis articulatis; petiolis dense griseo-vel flavido-farinaceis; laminis firme chartaceis vel subcoriaceis lanceolatis vel anguste ellipticis acutis vel longe acuminatis vel caudatis integris, ad basin attenuatis vel longe acuminatis, supra obscure pulver-